STATEMENT OF WORK
FOR A REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
AT THE GARY DEVELOPMENT LANDFILL SITE
GARY, LAKE COUNTY, INDIANA

I. PURPOSE

This Statement of Work (SOW) sets forth the requirements for conducting a Remedial Investigation and Feasibility Study (RI/FS) at the Gary Development Landfill Site in Gary, Indiana (Site). The Site includes the property located at 479 North Cline Avenue in Gary, Indiana and any nearby areas where hazardous substances, pollutants or contaminants from the property or from former operations at the property have or may have come to be located. The RI Report shall fully evaluate the nature and extent of hazardous substances, pollutants or contaminants at and/or from the Site. The RI Report shall also assess the risk which these hazardous substances, pollutants or contaminants present for human health and the environment. The RI Report shall provide sufficient data to develop and evaluate effective remedial alternatives. The FS Report shall evaluate alternatives for addressing the impact to human health and the environment from hazardous substances, pollutants or contaminants at the Site.

The Respondents shall prepare and complete the RI and FS Reports in compliance with the Administrative Order on Consent (AOC), SOW, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 C.F.R. Part 300) as amended and all requirements and guidance for RI/FS studies and reports, including but not limited to the United States Environmental Protection Agency (U.S. EPA) Superfund Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (EPA/540/G-89/004, October 1988) (RI/FS Guidance), and any other guidance that U.S. EPA uses in conducting or submitting deliverables for a RI/FS. Exhibit B sets forth a partial list of guidance used by U.S. EPA for a RI/FS.

The Respondents shall furnish all personnel, materials, and services necessary for, or incidental to, performing the RI/FS at the Site, except as otherwise specified herein.

II. DOCUMENT REVIEW

The Respondents shall submit all documents or deliverables required as part of this SOW to the U.S. EPA, with a copy to the Indiana Department of Environmental Management (IDEM), for review and approval by U.S. EPA. After review of any plan, report or other item which is required to be submitted for approval pursuant to this AOC, U.S. EPA, after reasonable opportunity for review and comment by IDEM, may: (a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions; (c) modify the submission to cure the deficiencies; (d) disapprove, in whole or in part, the submission, directing that Respondents modify the submission; or (e) any combination of the above.

However, U.S. EPA will not modify a submission without first providing Respondents at least one notice of deficiency and opportunity to cure within 30 days. (See Section X of the AOC for procedures concerning U.S. EPA Approval of Plans and Other Submissions)

III. SCOPE

Respondents shall complete the following tasks as part of this RI/FS:

Task 1: Project Scoping and RI/FS Planning Documents
Task 2: Community Relations
Task 3: Site Characterization
Task 4: Remedial Investigation Report
Task 5: Treatability Studies
Task 6: Development and Screening of Alternatives (Technical Memorandum)
Task 7: Detailed Analysis of Alternatives (FS Report)
Task 8: Progress Reports

TASK 1: PROJECT SCOPING AND RI/FS PLANNING DOCUMENTS

1.1. Site Background

The Respondents shall gather and analyze the existing Site background information and shall conduct a Site visit to assist in planning the scope of the RI/FS.

1.1.1. Collect and Analyze Existing Data

Before planning the RI/FS activities, the Respondents shall thoroughly compile and review all existing Site data. Historical data shall be submitted electronically according to U.S. EPA Region 5 specifications. Existing site data includes presently available data relating to the varieties and quantities of hazardous substances, pollutants and contaminants at the Site, past disposal practices, and the results of previous sampling activities. Examples of existing information about the Site includes historical aerial photographs, inspection reports, Site Reassessment Report (revised June 2006), Expanded Site Inspection Report (November 2009), HRS Scoring Package (March 2011), and additional information submitted to U.S. EPA by others.

1.1.2. Conduct Site Visit

The Respondents shall visit the Site during the project scoping phase to develop a better understanding of the Site, and focus on the sources and the areas of contamination, as well as potential exposure pathways and receptors at the Site. During the Site visit, the Respondents shall observe, to the extent possible, the site's physiography, hydrology, geology, and demographics, as well as natural resource, ecological and cultural features. The Respondents shall coordinate this visit with the U.S. EPA Remedial Project Manager (RPM).

1.2. RI/FS Planning Documents (Work Plan/Field Sampling Plan/QAPP)

1.2.1. General Requirements

Within 60 calendar days after the effective date of the AOC, the Respondents shall submit draft RI/FS Planning Documents (including the Work Plan/Field Sampling Plan, Quality Assurance Project Plan, and Health and Safety Plan) to U.S. EPA, with a copy to IDEM, for review and approval by U.S. EPA.

The objective of the RI/FS Planning Documents is to develop an RI/FS strategy and general management plan that accomplishes the following:

- A remedial investigation that fully determines the nature and extent of the release or threatened release of hazardous substances, pollutants, or contaminants at and from the Site. In performing this investigation, the Respondents shall gather sufficient data, samples, and other information to fully characterize the nature and extent of the contamination at the Site, to support the human health and ecological risk assessments, and to provide sufficient data for the identification and evaluation of remedial alternatives for this Site.

- A feasibility study that identifies and evaluates alternatives for remedial action to protect human health and the environment by preventing, eliminating, controlling or mitigating the release or threatened release of hazardous substances, pollutants, or contaminants at and from the Site.

When scoping the specific aspects of the project, the Respondents shall meet with U.S. EPA, with an invitation to IDEM to participate, to discuss all project planning decisions and special concerns associated with the Site.

The RI/FS Planning Documents shall include a detailed description of the tasks the Respondents shall perform, the information needed for each task, a detailed description of the information the Respondents shall produce during and at the conclusion of each task, and a description of the work products that the Respondents shall submit to U.S. EPA and IDEM. This includes the deliverables set forth in this SOW; a schedule for each of the required activities consistent with the RI/FS Guidance and other relevant guidance; and a project management plan including a data management plan (e.g., requirements for project management systems and software, minimum data requirements, requirements for submittal of electronic data, data format and backup data management), monthly reports to U.S. EPA and the state agency, and meetings and presentations to U.S. EPA and the state agency at the conclusion of each major phase of the RI/FS. The Respondents shall refer to Appendix B of the RI/FS Guidance for a description of the required contents of the RI/FS Planning Documents.

The RI/FS Planning Documents shall include the preliminary objectives for the remedial action at the Site; preliminary potential state and federal ARARs (chemical-specific, location-specific and action-specific); a description of the Site management strategy developed by the Respondents and U.S. EPA during scoping; a preliminary identification of remedial alternatives; and data needs for fully characterizing the nature and extent of the contamination at the site, evaluating risks and developing and evaluating remedial alternatives. The RI/FS Planning Documents shall reflect coordination with treatability study requirements, if any. The RI/FS Planning Documents shall also include a process for and manner of refining and/or identifying additional Federal and State ARARs, and for preparing the human health and ecological risk assessments and the feasibility study.

1.2.2. Specific Requirements

The Respondents shall prepare the RI/FS Planning Documents as described in "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA," October, 1988 and shall include:

1.2.2.1. Site Background

The Site Background section shall include a brief summary of the Site location, description, physiography, hydrology, geology, demographics, ecological, cultural and natural resource features, Site history, description of previous investigations and responses conducted at the Site by local, state, federal, or private parties, and Site data evaluations and project planning completed during the scoping process.

The Site background section shall discuss areas of waste handling and disposal activities, the locations of existing groundwater monitoring wells, if any, and previous surface water, sediment, soil, groundwater, and air sampling locations. The Site Background section shall include a summary description of available data and identify areas where hazardous substances, pollutants or contaminants were detected and the detected levels. This includes the data in previous site inspection reports, Site Reassessment Report (revised June 2006), Expanded Site Inspection Report (November 2009), HRS Scoring Package (March 2011), and additional information submitted to U.S. EPA by other parties. The Site Background section shall include tables displaying the minimum and maximum levels of detected hazardous substances, pollutants or contaminants in Site areas and media.

1.2.2.2 Work Plan/Field Sampling Plan

Respondents shall prepare the Work Plan/Field Sampling Plan (FSP) portion of the RI/FS Planning Documents to ensure that sample collection and analytical activities are conducted in accordance with technically acceptable protocols and that the data meet the Site-specific Data Quality Objectives as established in the Quality Assurance Project Plan (QAPP) and FSP. All sampling and analyses performed shall conform to U.S. EPA direction, approval, and guidance regarding sampling, quality assurance/quality control (QA/QC), data validation, and chain of custody procedures.

The Respondents shall ensure that the laboratory used to perform the analyses participates in a QA/QC program that complies with U.S. EPA guidance.

Upon request by U.S. EPA, the Respondents shall have such a laboratory analyze samples submitted by U.S. EPA for quality assurance monitoring. The Respondents shall provide U.S. EPA with the QA/QC procedures followed by all sampling teams and laboratories performing data collection and/or analysis. The Respondents shall also ensure the provision of analytical tracking information consistent with OSWER Directive No. 9240.0-2B, Extending the Tracking of Analytical Services to PRP-Lead Superfund Sites.

Upon request by U.S. EPA, the Respondents shall allow U.S. EPA or its authorized representatives to take split and/or duplicate samples of any samples collected by the Respondents or their contractors or agents. The Respondents shall notify U.S. EPA not less than 15 business days in advance of any sample collection activity. U.S. EPA shall have the right to take any additional samples that it deems necessary.

1.2.2.3. Data Gap Description/Data Acquisition

As part of the FSP, the Respondents shall analyze the currently available data. The Respondents shall identify those areas of the Site and nearby areas that require data and evaluation in order to define the extent of hazardous substances, pollutants or contaminants. This Section of the FSP shall include a description of the number, types, and locations of samples to be collected. The FSP shall include an environmental program to accomplish the following:

- Conduct Site Reconnaissance. The Respondents shall conduct:
  - Site surveys including property, boundary, utility rights-of-way, and topographic information
  - Land Survey
  - Topographic Mapping
  - Field Screening

- Conduct Geological Investigations (Soils and Sediments). The Respondents shall conduct geological investigations to determine the extent of hazardous substances, pollutants or contaminants in surface soils, subsurface soils and sediments at the Site. As part of this geological investigation Respondents shall:
  - Collect Surface Soil Samples
  - Collect Subsurface Soil Samples
  - Perform Soil Boring and Permeability Sampling
  - Collect Sediments Samples
  - Survey Soil Gases
  - Test Pit
  - Identify real-world horizontal, vertical, and elevation coordinates for all samples and site features in accordance with U.S. EPA Region 5 electronic data requirements

- Air Investigations. The Respondents shall conduct air investigations to determine the extent of atmospheric hazardous substances, pollutants or contaminants at and from the Site, which shall include:
    - Collect Air Samples
    - Establish Air Monitoring Station

- Hydrogeological Investigations (Ground Water). The Respondents shall conduct hydrogeological investigations of ground water to determine the horizontal and vertical distribution of hazardous substances, pollutants or contaminants in the groundwater and the extent, fate and transport of any groundwater plumes containing hazardous substances, pollutants or contaminants. The hydrogeological investigation shall include:
    - Install Well Systems
    - Collect Samples from Upgradient, Downgradient, Private and Municipal wells
    - Collect Samples During Drilling (e.g., HydroPunch or Equivalent)
    - Perform Hydraulic Tests (such as Pump Tests, Slug Tests and Grain Size Analyses)
    - Measure Ground-Water Elevations and determine horizontal and vertical sample locations in accordance with U.S. EPA Region 5 electronic data requirements
    - Modeling
    - Determine the direction of regional and local groundwater flow
    - Identify the local uses of groundwater including the number, location, depth and use of nearby private and municipal wells

- Conduct Hydrogeological Investigations (Surface Water). The Respondents shall conduct hydrogeological investigations to determine the nature and extent of contamination of surface water from the Site. The hydrogeological investigation shall include:
    - Collect Samples
    - Measure Surface-Water Elevation and Depth
    - Evaluate Flow and Hydrodynamics

- Conduct Waste Investigation. The Respondents shall characterize the waste materials at the Site. Respondent shall conduct the following activities as part of these waste investigations.
    - Collect Samples (Gas, Liquid, Solid)
    - Dispose of Derived Waste (Gas, Liquid, Solid)

- Conduct Geophysical Investigation. The Respondents shall conduct geophysical investigations to delineate waste depths, thicknesses and volume; the elevations of the underlying natural soil layer and the extent of cover over fill areas including the following, as appropriate:
    - Magnetometer

- Electromagnetic
- Ground-Penetrating Radar
- Seismic Refraction
- Resistivity
- Site Meteorology
- Cone Penetrometer Survey
- Remote Sensor Survey
- Radiological Investigation
- Test Pits, trenches and soil borings

- Conduct Ecological Investigation. The Respondents shall conduct ecological investigations to assess the impact to aquatic and terrestrial ecosystems from the disposal, release and migration of hazardous substances, pollutants or contaminants at the Site including:
  - Wetland and Habitat Delineation
  - Wildlife Observations
  - Community Characterization
  - Endangered Species Identification
  - Biota Sampling and Population Studies

- Collect Contaminated Building Samples. The Respondents shall collect contaminated building samples, as appropriate.

- Dispose of Investigation-Derived Waste. The Respondents shall characterize and dispose of investigation-derived wastes in accordance with local, state, and federal regulations as specified in the FSP (see the Fact Sheet, Guide to Management of Investigation-Derived Wastes, 9345.3-03FS (January 1992)).

- Evaluate and Document the Need for Treatability Studies. If the Respondents or U.S. EPA identify remedial actions that involve treatment, the Respondents shall include treatability studies as outlined in Task 5 of this SOW unless the Respondents satisfactorily demonstrate to U.S. EPA that such studies are not needed. When treatability studies are needed, the Respondents shall plan initial treatability testing activities (such as research and study design) to occur concurrently with Site characterization activities.

1.2.2.4. Quality Assurance Project Plan (QAPP)

The Respondents shall prepare a QAPP that is site specific and covers sample analysis and data handling for samples collected during the RI, based on the AOC and guidance provided by U.S. EPA. The Respondents shall prepare the QAPP in accordance with "EPA Requirements of Quality Assurance Project Plans (QA/R-5)" (EPA/240/B-01/003, March 2001) and "EPA Guidance for Quality Assurance Project Plans (QA/G-5)" (EPA/600/R-02/009, December 2002) and the Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP) Manual (EPA/505/B-04/900A, March 2005) or equivalent documentation as determined by EPA. The QAPP may include Field-Based Analytical Methods, if appropriate and scientifically defensible.

The Respondents shall demonstrate, in advance to U.S. EPA's satisfaction, that each laboratory it may use is qualified to conduct the proposed work. This includes use of methods and analytical protocols for the chemicals of concern in the media sampled within detection and quantification limits consistent with both QA/QC procedures and data quality objectives (DQO) approved in the QAPP for the Site by U.S. EPA. The laboratory must have and follow an approved QA program. If a laboratory not in the Contract Laboratory Program is selected, methods consistent with CLP methods that would be used at this Site for the purposes proposed and QA/QC procedures approved by U.S. EPA shall be used. The Respondents shall only use laboratories which have a documented Quality Assurance Program which complies with ANSI/ASQC E-4 1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995) and "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01-002, March 2001) or equivalent documentation as determined by U.S. EPA.

Upon request by U.S. EPA, the Respondents shall have their laboratory analyze samples submitted by U.S. EPA for quality assurance monitoring. The Respondents shall provide U.S. EPA with the QA/QC procedures followed by all sampling teams and laboratories performing data collection and/or analysis. The Respondents shall also ensure the provision of analytical tracking information consistent with OSWER Directive No. 9240.0-2B, "Extending the Tracking of Analytical Services to PRP-Lead Superfund Sites."

The Respondents shall participate in a pre-QAPP meeting or conference call with U.S. EPA. The purpose of this meeting or conference call is to discuss QAPP requirements and obtain any clarification needed to prepare the QAPP.

1.2.2.4. Health and Safety Plan

The Respondents shall prepare a Health and Safety Plan that conforms to its health and safety program and complies with the Occupational Safety and Health Administration (OSHA) regulations and protocols outlined in 29 C.F.R. Part 1910. The Health and Safety Plan shall be prepared in accordance with U.S. EPA's Standard Operating Safety Guide (PUB 9285.1-03, PB 92-963414, June 1992). The Health and Safety Plan shall include the 11 elements described in the RI/FS Guidance such as a health and safety risk analysis, a description of monitoring and personal protective equipment, medical monitoring, and Site control. U.S. EPA does not "approve" the Respondents' Health and Safety Plan, but rather U.S. EPA reviews it to ensure that all the necessary elements are included, and that the plan provides for the protection of human health and the environment, and after that review provides comments as may be necessary and appropriate. The safety plan must, at a minimum, follow the U.S. EPA's guidance document Standard Operating Safety Guides (Publication 9285.1-03, PB92-963414, June 1992).

TASK 2: COMMUNITY INVOLVEMENT SUPPORT AND TECHNICAL ASSISTANCE PLAN

U.S. EPA has the responsibility of developing and implementing community involvement activities for the Site. The critical community involvement planning steps performed by U.S. EPA and the state agency include conducting community interviews and developing a Community Involvement Plan. Although implementing the Community Involvement Plan is the responsibility of U.S. EPA, the Respondents, if directed by U.S. EPA, shall assist by providing information regarding the Site's history; participating in public meetings; assisting in preparing fact sheets for distribution to the general public; or conducting other activities approved by U.S. EPA. All PRP-conducted community involvement activities shall be planned and developed in coordination with U.S. EPA.

TASK 3: SITE CHARACTERIZATION

3.1 Investigate and Define Site Physical and Biological Characteristics

The Respondents shall implement the Work Plan/Field Sampling Plan and collect data on the physical and biological characteristics of the site and its surrounding areas including the physical physiography, geology, and hydrology, and specific physical characteristics. This information will be ascertained through a combination of physical measurements, observations, and sampling efforts and will be utilized to define potential transport pathways and human ecological receptor populations. In defining the site's physical characteristics the Respondents will also obtain sufficient engineering data (such as pumping characteristics) for the projection of contaminant fate and transport, and development and screening of remedial action alternatives, including information to assess treatment technologies.

The Respondents shall provide the RPM or the entity designated by the RPM with a paper copy and an electronic copy (according to U.S. EPA Region 5 format specification) of laboratory data within the monthly progress reports and in no event later than 90 days after samples are shipped for analysis. In addition, the monthly progress reports will summarize field activities (including drilling locations, depths and field notes if requested by RPM), problems encountered, solutions to problems, and upcoming field activities.

Upon request by U.S. EPA, the Respondents shall allow U.S. EPA or its authorized representatives to take split and/or duplicate samples of any samples collected by the Respondents or their contractors or agents. The Respondents shall notify U.S. EPA not less than 15 business days in advance of any sample collection activity. The U.S. EPA shall have the right to take any additional samples that it deems necessary.

3.2 Define Sources of Contamination

The Respondents shall locate each source of contamination. For each location, Respondents shall determine the areal extent and depth of contamination by sampling at incremental depths on a sampling grid. Respondents shall determine the physical characteristics and chemical constituents and their concentrations for all known and discovered sources of contamination.
The Respondents shall conduct sufficient sampling to define the boundaries of the contaminant sources to the level established in the QAPP and DQOs. Defining the source of contamination will include analyzing the potential for contaminant release (e.g., long term leaching from soil), contaminant mobility and persistence, and characteristics important for evaluating remedial actions, including information to assess treatment technologies.

3.3 Describe the Nature and Extent/Fate and Transport of Contamination

The Respondents shall gather information to describe the nature and extent of contamination as a final step during the field investigation. To describe the nature and extent of contamination, the Respondents will utilize the information on site physical and biological characteristics and sources of contamination to give a preliminary estimate of the contaminants that may have migrated. The Respondents will then implement an iterative monitoring program and any study program identified in the work plan or sampling plan such that by using analytical techniques sufficient to detect and quantify the concentration of contaminants, the migration of contaminants through the various media at site can be determined. In addition, the Respondents shall gather data for calculations of contaminant fate and transport. This process is continued until the area and depth of contamination are known to the level of contamination established in the QAPP and DQOs.

3.3.1 Evaluate Site Characteristics

The Respondents shall analyze and evaluate the data to describe: (1) site physical and biological characteristics; (2) contaminant source characteristics; (3) nature and extent of contamination; and (4) contaminant fate and transport. Results of the site physical characteristics, source characteristics, and extent of contamination analyses are utilized in the analysis of contaminant fate and transport. The Respondents shall evaluate the actual and potential magnitude of releases from the sources, and horizontal and vertical spread of contamination as well as mobility and persistence of contaminants. Where modeling is appropriate, such models shall be identified to U.S. EPA in a technical memorandum prior to their use. All data and programming, including any proprietary programs, shall be made available to U.S. EPA together with a sensitivity analysis. The RI data shall be presented electronically according to U.S. EPA Region 5 format requirements. Analysis of data collected for site characterization will meet the DQOs developed in the QAPP and stated in the FSP (or revised during the RI).

3.3.2. Baseline Human Health Risk Assessment

As an attachment to the RI Report, the Respondents shall submit a Baseline Human Health Risk Assessment Report to U.S. EPA, with a copy to IDEM, for review and approval by U.S. EPA. The Respondents shall conduct the baseline risk assessment to determine whether site contaminants pose a current or potential risk to human health and the environment in the absence of any remedial action. The major components of the Baseline Risk Assessment include contaminant identification, exposure assessment, toxicity assessment, and human health and ecological risk characterization.

Respondents shall conduct a baseline human health risk assessment that focuses on actual and potential risks to persons coming into contact with on-site hazardous substances, pollutants or contaminants as well as risks to the nearby residential, recreational and industrial worker populations from exposure to hazardous substances, pollutants or contaminants in groundwater, soils, sediments, surface water, air, and ingestion of contaminated organisms in nearby, impacted ecosystems. The human health risk assessment shall define central tendency and reasonable maximum estimates of exposure for current land use conditions and reasonable future land use conditions. The human health risk assessment shall use data from the Site and nearby areas to identify the contaminants of concern (COC), provide an estimate of how and to what extent human receptors might be exposed to these COCs, and provide an assessment of the health effects associated with these COCs. The human health risk assessment shall project the potential risk of health problems occurring if no cleanup action is taken at the Site and/or nearby areas, and establish target action levels for COCs (carcinogenic and non-carcinogenic).

Respondents shall conduct the human health risk assessment in accordance with U.S. EPA guidance including, at a minimum: "Risk Assessment Guidance for Superfund (RAGS), Volume I - Human Health Evaluation Manual (Part A)," Interim Final (EPA-540-1-89-002)," OSWER Directive 9285.7-01A; December 1, 1989; and "Risk Assessment Guidance for Superfund (RAGS), Volume I - Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments)," Interim, (EPA 540-R-97-033), OSWER 9285.7-01D, January, 1998 or subsequently issued guidance.

As determined appropriate by U.S. EPA, the Respondents shall also conduct the human health risk assessment in accordance with the following additional guidance found in the following OSWER directives:

1) "Clarification to the 1994 Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive 9200.4-27; August, 1998,

2) "Implementation of the Risk Assessment Guidance for Superfund (RAGS) Volume I - Human Health Evaluation Manual, (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments) (Interim)," OSWER Directive 9285.7-01D-1; December 17, 1997,

3) "Soil Screening Guidance: Technical Background Document," OSWER Directive 9355.4-17A; May 1, 1996 and "Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites, OSWER Directive 9355.4; March 24, 2001,

4) "Soil Screening Guidance: User's Guide," Publication 9355.4-23; April, 1996,

5) "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," OSWER Directive 9355.4-12; July 14, 1994,

6) "Guidance Manual for the Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children," Publication 9285.7-15-1; February, 1994, and associated, clarifying Short Sheets on IEUBK Model inputs, including but not limited to OSWER 9285.7-32 through 34, as listed on the OSWER lead internet site at http://www.epa.gov/superfund/health/contaminants/lead/guidance.htm,

7) "Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children," Version 0.99D, NTIS PB94-501517, 1994 or "Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children," Windows© version, 2001,

8) "Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual: (Part B, Development of Risk-based Preliminary Remediation Goals)," Interim, OSWER Directive 9285.7-01B; December, 1991,

9) "Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors," OSWER Directive 9285.6-03; March 25, 1991, and

10) "Exposure Factors Handbook," Volumes I, II, and III; August 1997 (EPA/600/P-95/002Fa,b,c).

Respondents shall also comply with the guidance on assessing human health risk associated with adult exposures to lead in soil as found in the following document: "Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil," December, 1996. This document may be downloaded from the Internet at the following address: http://www.epa.gov/superfund/pubs/rpubs.htm.

Respondents shall also comply with the "Superfund Lead- Contaminated Residential Sites Handbook," December 2002 by the U.S. EPA Lead Sites Workgroup.

Additional applicable or relevant guidance may be used only if approved by U.S. EPA.

Respondents shall prepare the Human Health Risk Assessment Report according to the guidelines outlined below:

- Hazard Identification (sources). The Respondents shall review available information on the hazardous substances present at the site and identify the major contaminants of concern.
- Dose-Response Assessment. The Respondents shall select contaminants of concern based on their intrinsic toxicological properties.
- Conceptual Exposure/Pathway Analysis. The Respondents shall identify and analyze critical exposure pathways (e.g., drinking water). The proximity of contaminants to exposure pathways and their potential to migrate into critical exposure pathways shall be assessed.
- Characterization of Site and Potential Receptors. The Respondents shall identify and characterize human populations in the exposure pathways.
- Exposure Assessment. The exposure assessment will identify the magnitude of actual or potential human exposures, the frequency and duration of these exposures, and the routes by which receptors are exposed. The exposure assessment shall include an evaluation of the likelihood of such exposures occurring and shall provide the basis for the development of acceptable exposure levels. In developing the exposure assessment, the Respondents shall develop reasonable maximum estimates of exposure for both current land use conditions and potential land use conditions at the site.
- Risk Characterization. During risk characterization, Respondents shall compare chemical-specific toxicity information, combined with quantitative and qualitative information from the exposure assessment, to measured levels of contaminant exposure levels and the levels predicted through environmental fate and transport modeling. These comparisons shall determine whether concentrations of contaminants at or near the site are affecting or could potentially affect human health.
- Identification of Limitations/Uncertainties. The Respondents shall identify critical assumptions (e.g., background concentrations and conditions) and uncertainties in the report.
- Site Conceptual Model. Based on contaminant identification, exposure assessment, toxicity assessment, and risk characterization, the Respondents shall develop a conceptual model of the site.

3.3.2. Baseline Ecological Risk Assessment

As an attachment to the RI Report, the Respondents shall submit a Baseline Ecological Risk Assessment Report to U.S. EPA, with a copy to IDEM, for review and approval by U.S. EPA. In the Ecological Risk Assessment Report, the Respondents shall evaluate and assess the risk to the environment posed by site contaminants. Respondents shall prepare the Ecological Risk Assessment Report in accordance with U.S. EPA guidance including, at a minimum: "Ecological Risk Assessment Guidance for Superfund, Process for Designing and Conducting Ecological Risk Assessments, (EPA-540-R-97-006, June 1997), OSWER Directive 9285.7-25 and shall follow the guidelines outlined below:

- Hazard Identification (sources). The Respondents shall review available information on the hazardous substances present at the site and identify the major contaminants of concern.
- Dose-Response Assessment. The Respondents must select contaminants of concern based on their intrinsic toxicological properties.
- Conceptual Exposure/Pathway Analysis. Critical exposure pathways (e.g., surface water) shall be identified and analyzed. The proximity of contaminants to exposure pathways and their potential to migrate into critical exposure pathways shall be assessed.
- Characterization of Site and Potential Receptors. The Respondents shall identify and characterize environmental exposure pathways.
- Selection of Chemicals, Indicator Species, and End Points. In preparing the assessment, the Respondents will select representative chemicals, indicator species (species that are especially sensitive to environmental contaminants), and end points on which to concentrate.
- Exposure Assessment. In the exposure assessment, Respondents must identify the magnitude of actual or environmental exposures, the frequency and duration of these exposures, and the routes by which receptors are exposed. The exposure assessment shall include an evaluation of the likelihood of such exposures occurring and shall provide the basis for the development of acceptable exposure levels. In developing the exposure assessment, the Respondents shall develop reasonable maximum estimates of exposure for both current land use conditions and potential land use conditions at the site.
- Toxicity Assessment/Ecological Effects Assessment. The toxicity and ecological effects assessment will address the types of adverse environmental effects associated with chemical exposures, the relationships between magnitude of exposures and adverse effects, and the related uncertainties for contaminant toxicity (e.g., weight of evidence for a chemical's carcinogenicity).
- Risk Characterization. During risk characterization, Respondents shall compare chemical-specific toxicity information, combined with quantitative and qualitative information from the exposure assessment, to measured levels of contaminant exposure levels and the levels predicted through environmental fate and transport modeling. These comparisons shall determine whether concentrations of contaminants at or near the site are affecting or could potentially affect the environment.
- Identification of Limitations/Uncertainties. The Respondents shall identify critical assumptions (e.g., background concentrations and conditions) and uncertainties in the report.
- Site Conceptual Model. Based on contaminant identification, exposure assessment, toxicity assessment, and risk characterization, the Respondents shall develop a conceptual model of the site.

3.4 Current and Future Land Uses and Reuse Assessment

As an Attachment to the RI Report, Respondents shall submit a Memorandum to U.S. EPA for review and approval that evaluates the current and reasonably anticipated future land uses at the Site. The Memorandum shall identify: 1) past uses at the site including title and lien information; 2) current uses of the site and neighboring areas; 3) the owner's plans for the site following cleanup and any prospective purchasers; 4) applicable zoning laws and ordinance; 5) current zoning; 6) applicable local area land use plans, master plans and how they affect the site; 7) existing local restrictions on property; 8) property boundaries; 9) groundwater use determinations, wellhead protection areas, recharge areas and other areas identified in the state's Comprehensive Ground Water Protection Program; 10) Flood plains, wetland, or endangered or threatened species; and 11) utility rights of way.

If U.S. EPA, in its sole discretion, determines that a Reuse Assessment is necessary, Respondents will perform the Reuse Assessment in accordance with U.S. EPA guidance, including, but not limited to: "Reuse Assessments: A Tool To Implement The Superfund Land Use Directive, OSWER 9355.7-06P, June 4, 2001 upon request of U.S. EPA. The Reuse Assessment should provide sufficient information to develop realistic assumptions of the reasonably anticipated future uses for the Site.

TASK 4: REMEDIAL INVESTIGATION (RI) REPORT

Within 60 calendar days following receipt of the last set of analytical data collected as part of the RI or unless otherwise approved by U.S. EPA, the Respondents shall submit to U.S. EPA, with a copy to IDEM, for review and approval by U.S. EPA, an RI Report addressing all of the Site and nearby areas. The RI Report shall be consistent with the AOC and this SOW. The RI Report shall accurately establish the site characteristics such as media contaminated, extent of contamination, and the physical boundaries of the contamination. Pursuant to this objective, the Respondents shall obtain only the essential amount of detailed data necessary to determine the key(s) contaminant(s) movement and extent of contamination. The key contaminant(s) must be selected based on persistence and mobility in the environment and the degree of hazard. The key contaminant(s) identified in the RI shall be evaluated for receptor exposure and an estimate of the key contaminant(s) level reaching human or environmental receptors must be made. The Respondents shall use existing standards and guidelines such as drinking-water standards, water-quality criteria, and other criteria accepted by the U.S. EPA as appropriate for the situation may be used to evaluate effects on human receptors who may be exposed to the key contaminant(s) above appropriate standards or guidelines. Respondents shall complete the RI Report in accordance with the following requirements:

The Respondents shall submit an RI Report to U.S. EPA for review and approval pursuant to Section 2, which includes the following:

- Executive Summary
- Site Background. The Respondents shall assemble and review available facts about the regional conditions and conditions specific to the site under investigation.
- Investigation (as applicable)

- Site Reconnaissance
- Field Investigation & Technical Approach
- Chemical Analysis & Analytical Methods
- Field Methodologies
- Biological
- Surface Water
- Sediment
- Soil Boring
- Soil Sampling
- Monitoring Well Installation
- Groundwater Sampling
- Hydrogeological Assessment
- Air Sampling
- Waste Investigation
- Geophysical Investigation

• Site Characteristics (as applicable)
  - Geology
  - Hydrogeology
  - Meteorology
  - Demographics and Land Use
  - Ecological Assessment
  - Hydrodynamics

• Nature and Extent of Contamination
  - Contaminant Sources
  - Contaminant Distribution and Trends

• Fate and Transport
  - Contaminant Characteristics
  - Transport Processes
  - Contaminant Migration Trends

• Human Risk Assessment
  - Hazard Identification (sources)
  - Dose-Response Assessment
  - Prepare Conceptual Exposure/Pathway Analysis
  - Characterization of Site and Potential Receptors
  - Exposure Assessment
  - Risk Characterization
  - Identification of Limitations/Uncertainties
  - Site Conceptual Model

• Ecological Risk Assessment
  - Hazard Identification (sources)
  - Dose-Response Assessment

- Prepare Conceptual Exposure/Pathway Analysis
- Characterization of Site and Potential Receptors
- Selection of Chemicals, Indicator Species, and End Points
- Exposure Assessment
- Toxicity Assessment/Ecological Effects Assessment
- Risk Characterization
- Identification of Limitations/Uncertainties
- Site Conceptual Model

- Summary and Conclusions

TASK 5: TREATABILITY STUDIES

If U.S. EPA or the Respondents determine that treatability testing is necessary, the Respondents shall conduct treatability studies as described in this Task 5 of this SOW. In addition, if applicable, the Respondents shall use the testing results and operating conditions in the detailed design of the selected remedial technology. The Respondents shall perform the following activities.

5.1 Determine Candidate Technologies and of the Need for Testing

The Respondents shall submit a Candidate Technologies and Testing Needs Technical Memorandum, to U.S. EPA, with a copy to IDEM, for review and approval by U.S. EPA, that identifies candidate technologies for a treatability studies program no later than at the time of submittal of the draft RI Report. The list of candidate technologies shall cover the range of technologies required for alternatives analysis. The Respondents shall determine and refine the specific data requirements for the testing program during Site characterization and the development and screening of remedial alternatives.

5.1.1 Conduct Literature Survey and Determine the Need for Treatability Testing

Within the Candidate Technologies and Testing Needs Technical Memorandum, the Respondents shall conduct a literature survey to gather information on the performance, relative costs, applicability, removal efficiencies, operation and maintenance (O&M) requirements, and implementability of candidate technologies. Respondents shall conduct treatability studies except where Respondents can demonstrate to U.S. EPA's satisfaction that they are not needed.

5.2 Treatability Testing and Deliverables

5.2.1 Treatability Testing Work Plan and Sampling and Analysis Plan (SAP)

If U.S. EPA determines that treatability testing is necessary, U.S. EPA will decide on the type of treatability testing to use (e.g., bench versus pilot). Within 30 days of a request of U.S. EPA, the Respondents shall submit a Treatability Testing Work Plan and a SAP, or amendments to the original RI/FS Work Plan, FSP and QAPP to U.S. EPA, with a copy to IDEM, for review and approval by U.S. EPA, that describes the Site background, the remedial technology(ies) to be tested, test objectives, experimental procedures, treatability conditions to be tested, measurements of performance, analytical methods, data management and analysis, health and safety, and residual waste management. The Respondents shall document the DQOs for treatability testing as well.

If pilot scale treatability testing is to be performed, the Treatability Study Work Plan shall describe pilot plant installation and start-up, pilot plant operation and maintenance procedures, operating conditions to be tested, a sampling plan to determine pilot plant performance, and a detailed health and safety plan. If testing is to be performed off-Site, the plans shall address all permitting requirements. The requirements of SAPs are outlined in Task 1.2.2 of this SOW.

5.2.2 Treatability Study Health and Safety Plan

If the original Health and Safety Plan is not adequate for defining the activities to be performed during the treatability tests, the Respondents shall submit a separate or amended Health and Safety Plan. Task 1.2.2 of this SOW provides additional information on the requirements of the Health and Safety Plan. U.S. EPA reviews, but does not "approve" the Treatability Study Health and Safety Plan.

5.2.3 Treatability Study Evaluation Report

Following the completion of the treatability testing, the Respondents shall analyze and interpret the testing results in a technical report to U.S. EPA and IDEM. Respondents shall submit the treatability study report according to the schedule in the Treatability Study Work Plan. This report may be a part of the Site Characterization Technical Memorandum, the RI Report or submitted as a separate deliverable. The Treatability Study Evaluation Report shall evaluate each technology's effectiveness, implementability and cost, and actual results as compared with predicted results. The report shall also evaluate full scale application of the technology, including a sensitivity analysis identifying the key parameters affecting full-scale operation.

TASK 6: DEVELOPMENT AND SCREENING OF ALTERNATIVES (Technical Memorandum)

The Respondents shall develop and screen an appropriate range of remedial alternatives that will be evaluated by the Respondents. This range of alternatives shall include, as appropriate, options in which treatment is used to reduce the toxicity, mobility, or volume of wastes, but which vary in the types of treatment, the amount treated, and the manner in which long-term

residuals or untreated wastes are managed; options involving containment with little or no treatment; options involving both treatment and containment; and a no-action alternative. The Respondents shall perform the following activities as a function of the development and screening of remedial alternatives.

6.1 Alternatives Development and Screening Deliverables

The Respondents shall prepare and submit three technical memoranda for this task: a Remedial Action Objectives Technical Memorandum, an Alternative Arrays Technical Memorandum and a Comparative Analysis of Alternatives Memorandum.

6.1.1 Remedial Action Objectives Technical Memorandum

The Respondents shall submit a Remedial Action Objectives Technical Memorandum to U.S. EPA, with a copy to IDEM, for review and approval by U.S. EPA. The Respondents shall submit the Remedial Action Objectives Technical Memorandum at the same time as the Draft RI Report. Based on the baseline human health and ecological risk assessments, the Respondents shall document the Site-specific remedial action objectives in a Remedial Action Objectives Technical Memorandum. The remedial action objectives shall specify the contaminants and media of concern, potential exposure pathways and receptors; and contaminant level or range of levels (at particular locations for each exposure route) that are protective of human health and the environment. Remedial action objectives shall be developed by considering the factors set forth in 40 C.F.R. § 300.430(e)(2)(i). The Respondents shall incorporate U.S. EPA's comments on the Remedial Action Objectives Technical Memorandum in the Alternatives Screening Technical Memorandum.

6.1.2 Alternatives Screening Technical Memorandum

The Respondents shall submit an Alternatives Screening Technical Memorandum to U.S. EPA, with a copy to IDEM, for review and approval by U.S. EPA. The Alternatives Screening Technical Memorandum shall summarize the work performed and the results of each of the above tasks, and shall include an alternatives array summary. If required by U.S. EPA, the Respondents shall modify the alternatives array to assure that the array identifies a complete and appropriate range of viable alternatives to be considered in the detailed analysis. The Alternatives Screening Technical Memorandum shall document the methods, the rationale and the results of the alternatives screening process. The Respondents shall incorporate U.S. EPA's comments on the Alternatives Screening Technical Memorandum in the Comparative Analysis of Alternatives Technical Memorandum. The Respondents shall submit the Alternatives Screening Technical Memorandum within 30 calendar days after receipt of U.S. EPA's comments on the Remedial Action Objectives Technical Memorandum.

6.1.2.1 Develop General Response Actions

In the Alternatives Technical Memorandum, the Respondents shall develop general response actions for each medium of interest including containment, treatment, excavation, pumping, or other actions, singly or in combination, to satisfy the U.S. EPA-approved remedial action objectives.

6.1.2.2 Identify Areas or Volumes of Media

In the Alternatives Technical Memorandum, the Respondents shall identify areas or volumes of media to which the general response actions may apply, taking into account requirements for protectiveness as identified in the remedial action objectives. The Respondents shall also take into account the chemical and physical characterization of the Site.

6.1.2.3 Identify, Screen, and Document Remedial Technologies

In the Alternatives Technical Memorandum, the Respondents shall identify and evaluate technologies applicable to each general response action to eliminate those that cannot be implemented at the Site. The Respondents shall refine applicable general response actions to specify remedial technology types. The Respondents shall identify technology process options for each of the technology types concurrently with the identification of such technology types or following the screening of considered technology types. The Respondents shall evaluate process options on the basis of effectiveness, implementability, and cost factors to select and retain one or, if necessary, more representative processes for each technology type. The Respondents shall summarize and include the technology types and process options in the Alternatives Screening Technical Memorandum. Whenever practicable, the alternatives shall also consider the CERCLA preference for treatment over conventional containment or land disposal approaches.

In the Alternatives Technical Memorandum, Respondents shall provide a preliminary list of alternatives to address contaminated soil, sediments, surface water, groundwater, and air contamination at the Site that shall consist of, but is not limited to, treatment technologies, removal and off-site treatment/disposal, removal and on-site disposal, and in-place containment for soils, sediments, and wastes. See 40 C.F.R. § 300.430(e)(1)-(7). The Respondents shall specify the reasons for eliminating any alternatives.

6.1.2.4 Assemble and Document Alternatives

The Respondents shall assemble the selected representative technologies into alternatives for each affected medium or operable unit. Together, all of the alternatives shall represent a range of treatment and containment combinations that shall address either the Site or the operable unit as a whole. The Respondents shall prepare a summary of the assembled alternatives and their related ARARs for the Alternatives Screening Technical Memorandum. The Respondents shall specify the reasons for eliminating alternatives during the preliminary screening process.

6.1.2.5 Refine Alternatives

The Respondents shall refine the remedial alternatives to identify the volumes of contaminated media addressed by the proposed processes and size critical unit operations as necessary. The Respondents shall collect sufficient information for an adequate comparison of alternatives. The Respondents shall also modify the remedial action objectives for each chemical in each medium as necessary to incorporate any new human health and ecological risk assessment information presented in the Respondents' baseline human health and ecological risk assessment reports. Additionally, the Respondents shall update ARARs as the remedial alternatives are refined.

6.1.3 Conduct and Document Screening Evaluation of Each Alternative

The Respondents may perform a final screening process based on short and long term aspects of effectiveness, implementability, and relative cost. Generally, this screening process is only necessary when there are many feasible alternatives available for a detailed analysis. If necessary, the Respondents shall conduct the screening of alternatives to assure that only the alternatives with the most favorable composite evaluation of all factors are retained for further analysis. As appropriate, the screening shall preserve the range of treatment and containment alternatives that was initially developed. The range of remaining alternatives shall include options that use treatment technologies and permanent solutions to the maximum extent practicable. The Respondents shall prepare an Alternatives Screening Technical Memorandum that summarizes the results and reasoning employed in screening; arrays the alternatives that remain after screening; and identifies the action-specific ARARs for the alternatives that remain after screening.

TASK 7: DETAILED ANALYSIS of ALTERNATIVES (FS REPORT)

The Respondents shall conduct and present a detailed analysis of remedial alternatives to provide U.S. EPA with the information needed to select a Site remedy.

7.1 Detailed Analysis of Alternatives

The Respondents shall conduct a detailed analysis of the remedial alternatives for the Site. The detailed analysis shall include an analysis of each remedial option against each of the nine evaluation criteria set forth in 40 C.F.R. § 300.430(e)(9)(iii) and a comparative analysis of all options using the same nine criteria as a basis for comparison.

7.1.1 Apply Nine Criteria and Document Analysis

The Respondents shall apply the nine evaluation criteria to the assembled remedial alternatives to ensure that the selected remedial alternative will protect human health and the environment and meet remedial action objectives; will comply with, or include a waiver of, ARARs; will be cost-effective; will utilize permanent solutions and alternative treatment technologies, or resource recovery technologies, to the maximum extent practicable; and will address the statutory preference for treatment as a principal element. The evaluation criteria include: (1) overall protection of human health and the environment and how the alternative meets each of the

remedial action objectives; (2) compliance with ARARs; (3) long-term effectiveness and permanence; (4) reduction of toxicity, mobility, or volume; (5) short-term effectiveness; (6) implementability; (7) cost; (8) state (or support agency) acceptance; and (9) community acceptance. (Note: criteria 8 and 9 are considered after the RI/FS report has been released to the general public.) For each alternative the Respondents shall provide: (1) a description of the alternative that outlines the waste management strategy involved and identifies the key ARARs associated with each alternative, and (2) a discussion of the individual criterion assessment. If the Respondents do not have direct input on criteria (8) state (or support agency) acceptance and (9) community acceptance, U.S. EPA will address these criteria.

7.1.2 Compare Alternatives Against Each Other and Document the Comparison of Alternatives

The Respondents shall perform a comparative analysis between the remedial alternatives. That is, the Respondents shall compare each alternative against the other alternatives using the evaluation criteria as a basis of comparison. U.S. EPA will identify and select the preferred alternative. The Respondents shall prepare a Comparative Analysis of Alternatives Technical Memorandum which summarizes the results of the comparative analysis and fully and satisfactorily addresses and incorporates U.S. EPA's comments on the Alternatives Screening Technical Memorandum. The Respondents shall incorporate U.S. EPA's comments on the Comparative Analysis of Alternatives Technical Memorandum in the draft FS Report. The Respondents shall submit the Comparative Analysis of Alternatives Memorandum within 60 calendar days after receipt of U.S. EPA's comments on the Alternatives Screening Technical Memorandum.

7.1.3. Alternatives Analysis for Institutional Controls

For any Alternatives that relies on Institutional Controls, Respondents shall include in the Alternatives Screening Technical Memorandum, Comparative Analysis of Alternative Technical Memorandum and Feasibility Study an evaluation of the following: 1) Overall Protection of Human Health and the Environment including what specific institutional control components will ensure that the alternative will remain protective and how these specific controls will meet remedial action objectives; 2) Compliance with ARARs; 3) Long Term Effectiveness including the adequacy and reliability of institutional controls and how long the institutional control must remain in place; 4) Short Term Effectiveness including the amount of time it will take to impose the Institutional Control; 5) Implementability including research and documentation that the proper entities (e.g., potentially responsible parties, state, local government entities, local landowners conservation organizations) are willing to enter into any necessary agreement or restrictive covenant with the proper entities and/or that laws governing the restriction exist or allow implementation of the institutional control; 6) Cost including the cost to implement, maintain, monitor and enforce the institutional control; 7) State and Community acceptance of the Institutional Control.

7.2 Feasibility Study Report

Within 60 days after receipt of U.S. EPA's comments on the Comparative Analysis of Alternatives Technical Memorandum, the Respondents shall prepare and submit a draft FS Report to U.S. EPA for its review pursuant to Section 2. The FS report shall summarize the development and screening of the remedial alternatives and present the detailed analysis of remedial alternatives. In addition, the FS Report shall also include the information U.S. EPA will need to prepare relevant sections of the Record of Decision (ROD) for the Site [see Chapters 6 and 9 of U.S. EPA's, "A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents" (EPA 540-R-98-031, July 1999) for the information that is needed].

TASK 8: PROGRESS REPORTS

The Respondents shall submit monthly written progress reports to U.S. EPA and IDEM concerning actions undertaken pursuant to the AOC and this SOW, beginning 30 calendar days after the effective date of the AOC, until the termination of the AOC, unless otherwise directed in writing by the RPM. These reports shall include, but not be limited to, a description of all significant developments during the preceding period, including the specific work that was performed and any problems that were encountered; a paper and electronic copies (formatted according to U.S. EPA specifications) and summary of the analytical data that was received during the reporting period; and the developments anticipated during the next reporting period, including a schedule of work to be performed, anticipated problems, and actual or planned resolutions of past or anticipated problems. The monthly progress reports will summarize the field activities conducted each month including, but not limited to drilling and sample locations, depths and descriptions; boring logs; sample collection logs; field notes; problems encountered; solutions to problems; a description of any modifications to the procedures outlined in the RI/FS Work Plan, the FSP, QAPP or Health and Safety Plan, with justifications for the modifications; a summary of all data received during the reporting period and the analytical results; and upcoming field activities. In addition, the Respondents shall provide the RPM or the entity designated by the RPM with all laboratory data within the monthly progress reports and in no event later than 60 days after samples are shipped for analysis.

EXHIBIT A
SCHEDULE FOR MAJOR DELIVERABLES

DELIVERABLE	DUE DATE
TASK 1.2.2 - RI/FS Planning Documents, including Work Plan/Field Sampling Plan, Quality Assurance Project Plan and Health and Safety Plan	RI/FS Planning documents due 60 calendar days after the effective date of the AOC. Final RI/FS Planning Documents due 30 days after U.S. EPA notification of deficiencies pursuant to Section 2 of the SOW and Section X of the AOC.
Task 2 - Quarterly Progress Reports on Implementation of the TAP	10 calendar days after the end of each calendar year quarter; first report due in the first full calendar year quarter after the effective date of the AOC.
Task 3 - Site Characterization Technical Communications	To be included in the monthly Progress Reports.
TASK 4 - RI Report	Draft RI Report due 60 calendar days following receipt of the last set of analytical data collected as part of the RI. Final RI Report due 30 calendar days after receipt of U.S. EPA's notification of deficiencies pursuant to Section 2 of this SOW and Section X of the AOC.
TASK 5.1 - Candidate Technologies and Testing Needs Technical Memorandum	With the Draft RI Report (Task 4)
TASK 5.2.1 - Draft and Final Treatability Testing Work Plan and SAP or Amendments to the Original RI/FS Work Plan, FSP and/or QAPP.	Within 30 days of request of U.S. EPA.
TASK 5.2.2 - Draft and Final Treatability Testing Health and Safety Plan or Amendment to the Original Health and Safety Plan	Within 30 days of request of U.S. EPA.

DELIVERABLE	DUE DATE
TASK 5.2.3 - Draft and Final Treatability Study Evaluation Report	With the RI Report (Task 4), or as approved by U.S. EPA in the Final Treatability Testing Work Plan/Field Sampling Plan.
TASK 6 - Remedial Action Objectives Technical Memorandum	With the draft RI Report (Task 4).
TASK 6 - Alternatives Screening Technical Memorandum	30 calendar days after receipt of U.S. EPA's comments on the Remedial Action Objectives Technical Memorandum.
TASK 6 - Comparative Analysis of Alternatives Technical Memorandum	30 calendar days after receipt of U.S. EPA's comments on the Alternatives Screening Technical Memorandum.
Task 7 - FS Report	Draft FS Report due 60 calendar days after receipt of U.S. EPA's comments on the Comparative Analysis of Alternatives Technical Memorandum. Final FS Report due 30 calendar days after receipt of U.S. EPA's notification of deficiency on the draft FS Report pursuant to Section 2 of the SOW and Section X of the AOC.
TASK 8: Monthly Progress Reports	On the 15th day of each month or the first business day after the 15th of the month commencing 30 calendar days after the effective date of the AOC.
Miscellaneous Documents	In accordance with the submittal date provided by RPM.

EXHIBIT B
PARTIAL LIST OF GUIDANCE

The following list, although not comprehensive, comprises many of the regulations and guidance documents that apply to the RI/FS process. The majority of these guidance documents, and additional applicable guidance documents, may be downloaded from the following websites:

http://www.epa.gov/superfund/pubs.htm (General Superfund)
http://cluin.org (Site Characterization, Monitoring and Remediation)
http://www.epa.gov/nrmrl/publications.html (Site Characterization and Monitoring)
http://www.epa.gov/quality/qa_docs.html (Quality Assurance)
http://www.epa.gov/superfund/programs/dfa/ (Dynamic Field Activities)
http://www.epa.gov/superfund/health/human_health.htm (Risk Assessment - Human)
http://www.epa.gov/superfund/programs/nrd/era.htm (Ecological Risk Assessment)
http://www.epa.gov/superfund/health/contaminants/lead/index.htm (Risk Assessment - Lead)
http://www.epa.gov/ncea/ (Risk Assessment - Exposure Factors/Other)
http://nepis.epa.gov/ (General Publications Clearinghouse)
http://www.epa.gov/fedfac/documents/qualityassurance.htm (UFP Manual and Examples)

1. The (revised) National Contingency Plan;

2. Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, U.S. EPA, Office of Emergency and Remedial Response, OSWER Directive No. 9355.3-01, EPA/540/G-89/004, October 1988.

3. Conducting Remedial Investigations/Feasibility Studies for CERCLA Municipal Landfill Sites, U.S. EPA, Office of Emergency and Remedial Response, EPA/540/P-91/001, February 1991.

4. Implementing Presumptive Remedies, U.S. EPA, Office of Emergency and Remedial Response, EPA-540-R-97-029, October 1997.

5. Presumptive Remedy for CERCLA Municipal Landfill Sites, U.S. EPA, OSWER Directive No. 9355.0-49FS, EPA-540-F-93-035, September 1993.

6. Presumptive Remedies: CERCLA Landfill Caps RI/FS Data Collection Guide, U.S. EPA, OSWER 9355.3-18FS, EPA/540/F-95/009, August 1995.

7. Presumptive Response Strategy and Ex-Situ Treatment Technologies for Contaminated Ground Water at CERCLA Sites, OSWER 9283.1-12, EPA-540-R-96-023, October 1996.

8. Field Analytical and Site Characterization Technologies Summary of Applications, U.S. EPA, EPA-542-F-97-024, November 1997.

9. CLU-IN Hazardous Waste Clean-Up Information World Wide Web Site, U.S. EPA, EPA-542-F-99-002, February 1999.

10. Field Sampling and Analysis Technology Matrix and Reference Guide, U.S. EPA, EPA-542-F-98-013, July 1998.

11. Subsurface Characterization and Monitoring Techniques: A Desk Reference Guide, Volumes 1 and 2, U.S. EPA, EPA/625/R-93/003, May 1993.

12. Use of Airborne, Surface, and Borehole Geophysical Techniques at Contaminated Sites: A Reference Guide, U.S. EPA, EPA/625/R-92/007(a,b), September 1993.

13. Innovations in Site Characterization: Geophysical Investigation at Hazardous Waste Sites, U.S. EPA, EPA-542-R-00-003, August 2000.

14. Innovative Remediation and Site Characterization Technology Resources, U.S. EPA, OSWER, EPA-542-F-01-026b, January 2001.

15. Handbook of Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells, U.S. EPA, EPA/600/4-89/034, 1991.

16. Ground Water Sampling Guidelines for Superfund and RCRA Project Managers, U.S. EPA, EPA-542-S-02-001, May 2002.

17. Ground Water Issue: Low-Flow (Minimal Drawdown) Ground- Water Sampling Procedures, U.S. EPA, EPA/540/S-95/504, April 1996.

18. Superfund Ground Water Issue: Ground Water Sampling for Metals Analysis, U.S. EPA, EPA-540-4-89-001, March 1989.

19. Resources for Strategic Site Investigation and Monitoring, U.S. EPA, OSWER, EPA-542-F-010030b, September 2001.

20. Region 5 Framework for Monitored Natural Attenuation Decisions for Groundwater, U.S. EPA Region 5, September 2000.

21. Ground Water Issue: Suggested Operating Procedures for Aquifer Pumping Tests, U.S. EPA, OSWER, EPA/540/S-93/503, February 1993.

22. Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water, U.S. EPA, EPA/600/R-98/128, September 1998.

23. Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action and Underground Storage Tank Sites, U.S. EPA, OSWER Directive 9200.4-17P, April 21, 1999.

24. Ground Water Issue: Fundamentals of Ground-Water Modeling, U.S. EPA, OSWER, EP/V540/S-92/005, April 1992.

25. Assessment Framework for Ground-Water Model Applications, U.S. EPA, OSWER Directive #9029.00, EPA-500-B-94-003, July 1994.

26. Ground-Water Modeling Compendium - Second Edition: Model Fact Sheets, Descriptions, Applications and Cost Guidelines, U.S. EPA, EPA-500-B-94-004, July 1994.

27. A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents, U.S. U.S. EPA, Office of Solid Waste and Emergency Response, OSWER Directive No. 9200.1-23P, U.S. EPA 540-R-98-031, July 1999.

28. Region 5 Instructions on the Preparation of a Superfund Division Quality Assurance Project Plan Based on U.S. EPA QA/R-5, Revision 0, U.S. EPA Region 5, June 2000.

29. Guidance for the Data Quality Objectives Process (QA-G-4), U.S. EPA, EPA/600/R-96/055, August 2000.

30. Guidance for Data Quality Objectives Process (QA-G-4) U.S. EPA, EPA/600/R-96/055, August 2000.

31. Guidance for the Preparation of Standard Operating Procedures (QA-G-6), U.S. EPA, EPA/240/B-01/004, March 2001.

32. U.S. EPA Requirements for Quality Management Plans (QA/R-2), U.S. EPA, EPA/240/B 01/002, March 2001.

33. U.S EPA Requirements for QA Project Plans (QA/R-5), U.S. EPA, EPA/240/B-01/003, March 2001.

34. Guidance for Quality Assurance Project Plans (QA/G-5), U.S. EPA, EPA/600/R-98/018, February 1998.

35. Users Guide to the U.S. EPA Contract Laboratory Program, U.S. EPA, Sample Management Office, OSWER Directive No. 9240.0-OlD, January 1991.

36. Technical Guidance Document: Quality Assurance and Quality Control for Waste Containment Facilities, U.S. EPA, EPA/600/R-93/182, 1993.

37. Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual (Part A), U.S. EPA, EPA/540/1-89/002, December 1989.

38. Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual (Part B, Development of Risk-Based Preliminary Remediation Goals), U.S. EPA, EPA/540/R-92/003, OSWER Publication 9285.7-01 B, December 1991.

39. Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual (Part C - Risk Evaluation of Remedial Alternatives), U.S. EPA, Office of Emergency and Remedial Response, Publication 9285.7-01 C, October, 1991.

40. Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual (Part D - Standardized Planning, Reporting, and Review of Superfund Risk Assessments), U.S. EPA, Office of Emergency and Remedial Response, Publication 9285.7-47, December 2001.

41. Risk Assessment Guidance for Superfund: Volume III - Part A, Process for Conducting Probabilistic Risk Assessment, U.S. EPA, OSWER Publication 9285.7-45, EPA-540-R-02-002, December 2001.

42. Policy for Use of Probabilistic in Risk Assessment at the U.S. Environmental Protection Agency, U.S. EPA, Office of Research and Development, 1997.

43. Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors, U.S. EPA, OSWER Directive 9285.6-03, March 25, 1991.

44. Exposure Factors Handbook, Volumes I, II, and III, U.S. EPA, EPA/600/P-95/002Fa,b,c, August 1997.

45. Supplemental Guidance to RAGS: Calculating the Concentration Term, U.S. EPA, OSWER Publication 9285.7-081, May 1992.

46. Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities, U.S. EPA, OSWER Directive 9355.4-12, EPA/540/F-94/043, July 14, 1994.

47. Clarification to the 1994 Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities, U.S. EPA, OSWER Directive 9200.4-27, EPA/540/F-98/030, August 1998.

48. Guidance Manual for the Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children, U.S. EPA, OSWER Publication 9285.7-15-1, February 1994; and associated, Clarifying Short Sheets on IEUBK Model inputs, including but not limited to OSWER9285.7-32 through 34, as listed on the OSWER lead internet site at: http://www.epa.gov/superfund/lead/products.htm

49. Integrated Exposure Uptake Biokinetic (lEUBK) Model for Lead in Children, Version 0.99D, NTIS PB94-501517, 1994 or Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children, Windows© version, 2001.

50. Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions, U.S. EPA, OSWER Directive 9355.0-30, April 22, 1991.

51. Performance of Risk Assessments in Remedial Investigation /Feasibility Studies (RI/FSs) Conducted by Potentially Responsible Parties (PRPs), OSWER Directive No. 9835.15, August 28, 1990.

52. Supplemental Guidance on Performing Risk Assessments in Remedial Investigation Feasibility Studies (RI/FSs) Conducted by Potentially Responsible Parties (PRPs), OSWER Directive No. 9835.15(a), July 2, 1991.

53. Role of Background in the CERCLA Cleanup Program, U.S. EPA, OSWER 9285.6-07P, April 26, 2002.

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55. Soil Screening Guidance: Technical Background Document, U.S. EPA, EPA/540/R95/128, May 1996.

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